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DESIGNATED/ELECTED OFFICE (DO/EO/US)
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U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

10/019787

INTERNATIONAL APPLICATION NO.
PCT/IB00/00241INTERNATIONAL FILING DATE
February 29, 2000PRIORITY DATE CLAIMED
July 5, 1999

TITLE OF INVENTION

METHOD AND APPARATUS FOR USE WITH E-MAIL

APPLICANT(S) FOR DO/EO/US

Mulham BAYASSI

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (24) indicated below.
4. ☒ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
 - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☐ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☐ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).
11. ☐ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☒ A copy of the International Search Report (PCT/ISA/210).

Items 13 to 20 below concern document(s) or information included:

13. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☒ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☐ A substitute specification.
18. ☐ A change of power of attorney and/or address letter.
19. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
20. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
21. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
22. ☒ Certificate of Mailing by Express Mail
23. ☐ Other items or information:

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR 10/019787	INTERNATIONAL APPLICATION NO. PCT/IB00/00241	ATTORNEY'S DOCKET NUMBER 11345.046001
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24. The following fees are submitted: BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) : <input type="checkbox"/> Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO \$1040.00 <input checked="" type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$890.00 <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$740.00 <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$710.00 <input type="checkbox"/> International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) \$100.00 <p style="text-align: center;">ENTER APPROPRIATE BASIC FEE AMOUNT =</p>				CALCULATIONS PTO USE ONLY <div style="border: 1px solid black; height: 100px; width: 100%;"></div>	
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492 (e)).				\$890.00 \$0.00	
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	48 - 20 =	28	x \$18.00	\$504.00	
Independent claims	10 - 3 =	7	x \$84.00	\$588.00	
Multiple Dependent Claims (check if applicable). <input type="checkbox"/>				\$0.00	
TOTAL OF ABOVE CALCULATIONS =				\$1,982.00	
Applicant claims small entity status. See 37 CFR 1.27). The fees indicated above are reduced by 1/2.				\$0.00	
SUBTOTAL =				\$1,982.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492 (f)).				\$0.00	
TOTAL NATIONAL FEE =				\$1,982.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable).			<input checked="" type="checkbox"/>	\$40.00	
TOTAL FEES ENCLOSED =				\$2,022.00	
				Amount to be: refunded	\$
				charged	\$

- a. ☒ A check in the amount of **\$2,022.00** to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees. A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. **50-0591**. A duplicate copy of this sheet is enclosed.
- d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

Jonathan P. Osha Rosenthal & Osha L.L.P. 1221 McKinney, Suite 2800 Houston, Texas 77010 Telephone: 713-228-8600 Facsimile: 713-228-8778	<div style="text-align: center;"> SIGNATURE </div> <div style="text-align: center;"> Jonathan P. Osha NAME </div> <div style="text-align: center;"> 33,986 REGISTRATION NUMBER </div> <div style="text-align: center;"> January 4, 2002 DATE </div>
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Mulham BAYASSI

Art Unit :

Serial No.:

Examiner :

Filed : January 3, 2002

Title : METHOD AND APPARATUS FOR USE WITH E-MAIL

Assistant Commissioner for Patents
Washington, DC 20231

PRELIMINARY AMENDMENT

Dear Sir:

Before examining the referenced application on the merits, please amend the application as follows:

IN THE CLAIMS

Please amend the claims as follows [a marked-up copy of the amended claims is attached as Appendix A]:

3. (Amended) A method according to claim 1 wherein the notification message includes an identifier of a receiver/decoder to which the notification message is to be sent.
5. (Amended) A method according to claim 3 wherein the receiver/decoder has a smartcard number and the identifier comprises at least part of the smartcard number.
6. (Amended) A method according to claim 1 further comprising storing information relating to e-mail accounts, preferably at a central location.

8. (Amended) A method according to claim 6 wherein the broadcast signal is part of a subscription service and information relating to e-mail accounts is linked to information relating to the subscription service.
9. (Amended) A method according to claim 1 wherein the notification message comprises an identifier of the recipient of the e-mail.
10. (Amended) A method according to claim 1 wherein the notification message comprises an identifier of the sender of the e-mail.
11. (Amended) A method according to claim 1 wherein the notification message comprises at least part of the text of the e-mail.
12. (Amended) A method according to claim 1 wherein the notification message is sent to a receiver/decoder.
14. (Amended) A method according to claim 1 further comprising storing preferences selected by the user.
15. (Amended) A method according to claim 1 further comprising notifying the user of a selected number of e-mails.
16. (Amended) A method according to claim 1 wherein the broadcast signal is a digital data stream.
21. (Amended) A method according to claim 1 further comprising transmitting at least part of the e-mail in the broadcast signal.

26. (Amended) Apparatus according to claim 24 further comprising means for storing information relating to e-mail accounts.
28. (Amended) Apparatus according to claim 26 wherein the broadcast signal is part of a subscription service and information relating to e-mail accounts is linked to information relating to the subscription service.
29. (Amended) Apparatus according to claim 24 wherein the notification message comprises an identifier of the recipient of the e-mail.
30. (Amended) Apparatus according to claim 24 wherein the notification message comprises an identifier of the sender of the e-mail.
31. (Amended) Apparatus according to claim 24 wherein the notification message comprises at least part of the text of the e-mail.
32. (Amended) Apparatus according to claim 24 further comprising means for storing preferences selected by the user.
33. (Amended) Apparatus according to claim 24 wherein the apparatus is adapted to notify the user of a selected number of e-mails.
34. (Amended) Apparatus according to claim 24 wherein the broadcast signal is a digital data stream.
37. (Amended) Apparatus according to claim 24 wherein the apparatus is adapted to send at least part of the e-mail in the broadcast signal.

43. (Amended) A receiver/decoder according to claim 41 wherein the receiver/decoder has a smartcard number and the identifier comprises at least part of the smartcard number.

44. (Amended) A receiver/decoder according to claim 41 wherein the receiver/decoder generates a signal indicating the receipt of e-mail by the mail centre.

45. (Amended) A receiver/decoder according to claim 41 wherein the receiver/decoder generates a signal for displaying at least part of the notification message.

48. (Amended) System for notifying a user of the receipt of e-mail comprising an apparatus for notifying a user of the receipt of e-mail by a mail centre and a receiver/decoder for receiving and/or decoding a broadcast signal;

the apparatus comprising means for transmitting a notification message in the broadcast signal; and

the receiver/decoder comprising means for receiving, together with the broadcast signal, a notification message for notifying the user of the receipt of e-mail by the mail centre.

Please cancel claims 49 and 50.

IN THE ABSTRACT

Please replace the Abstract with the following paragraph [a marked-up copy of the amended Abstract is attached in Appendix B]:

--A method of notifying a user of the receipt of an e-mail by a mail centre is described, the method including transmitting a notification message in a broadcast signal. Also

described is a method of notifying a user of the receipt of e-mail by a mail centre, which e-mail is to be transmitted to the user via a first medium, the method including transmitting a notification message, indicating the receipt of e-mail by the mail centre, to the user via a second medium, different from the first medium.--

REMARKS

The claims have been amended to remove multiple dependencies and to provide proper antecedent basis. No amendments have been made for reasons relating to patentability, and no new matter has been introduced by way of this amendment. The Abstract has been amended to correct formalities. Full examination and favorable action are requested.

Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference No. 11345.046001).

Respectfully submitted,

Date: 1/4/02



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APPENDIX A – MARKED-UP VERSION OF THE AMENDED CLAIMS

3. (Amended) A method according to claim 1[or 2] wherein the notification message includes an identifier of a receiver/decoder to which the notification message is to be sent.
5. (Amended) A method according to claim 3[or 4] wherein the receiver/decoder has a smartcard number and the identifier comprises at least part of the smartcard number.
6. (Amended) A method according to claim 1[any of the preceding claims] further comprising storing information relating to e-mail accounts, preferably at a central location.
8. (Amended) A method according to claim 6[or 7] wherein the broadcast signal is part of a subscription service and information relating to e-mail accounts is linked to information relating to the subscription service.
9. (Amended) A method according to claim 1[any of the preceding claims] wherein the notification message comprises an identifier of the recipient of the e-mail.
10. (Amended) A method according to claim 1[any of the preceding claims] wherein the notification message comprises an identifier of the sender of the e-mail.
11. (Amended) A method according to claim 1[any of the preceding claims] wherein the notification message comprises at least part of the text of the e-mail.
12. (Amended) A method according to claim 1[any of the preceding claims] wherein the notification message is sent to a receiver/decoder.
14. (Amended) A method according to claim 1[any of the preceding claims] further comprising storing preferences selected by the user.

15. (Amended) A method according to claim 1[any of the preceding claims] further comprising notifying the user of a selected number of e-mails.
16. (Amended) A method according to claim 1[any of the preceding claims] wherein the broadcast signal is a digital data stream.
21. (Amended) A method according to claim 1[any of the preceding claims] further comprising transmitting at least part of the e-mail in the broadcast signal.
26. (Amended) Apparatus according to claim 24[claims 24 or 25] further comprising means for storing information relating to e-mail accounts.
28. (Amended) Apparatus according to claim 26[or 27] wherein the broadcast signal is part of a subscription service and information relating to e-mail accounts is linked to information relating to the subscription service.
29. (Amended) Apparatus according to claim 24[any of claims 24 to 28] wherein the notification message comprises an identifier of the recipient of the e-mail.
30. (Amended) Apparatus according to claim 24[any of claims 24 to 29] wherein the notification message comprises an identifier of the sender of the e-mail.
31. (Amended) Apparatus according to claim 24[any of claims 24 to 30] wherein the notification message comprises at least part of the text of the e-mail.
32. (Amended) Apparatus according to claim 24[any of claims 24 to 31] further comprising means for storing preferences selected by the user.

33. (Amended) Apparatus according to claim 24[any of claims 24 to 32] wherein the apparatus is adapted to notify the user of a selected number of e-mails.

34. (Amended) Apparatus according to claim 24[any of claims 24 to 33] wherein the broadcast signal is a digital data stream.

37. (Amended) Apparatus according to claim 24[any of claims 24 to 36] wherein the apparatus is adapted to send at least part of the e-mail in the broadcast signal.

43. (Amended) A receiver/decoder according to claim 41[or 42] wherein the receiver/decoder has a smartcard number and the identifier comprises at least part of the smartcard number.

44. (Amended) A receiver/decoder according to claim 41[any of claims 41 to 43] wherein the receiver/decoder generates a signal indicating the receipt of e-mail by the mail centre.

45. (Amended) A receiver/decoder according to claim 41[any of claims 41 to 44] wherein the receiver/decoder generates a signal for displaying at least part of the notification message.

48. (Amended) System for notifying a user of the receipt of e-mail comprising an apparatus for notifying a user of the receipt of e-mail by a mail centre[according to any of claims 24 to 40] and a receiver/decoder for receiving and/or decoding a broadcast signal[according to any of claims 41 to 47.];

the apparatus comprising means for transmitting a notification message in the broadcast signal; and

the receiver/decoder comprising means for receiving, together with the broadcast signal, a notification message for notifying the user of the receipt of e-mail by the mail centre.

APPENDIX B – MARKED-UP VERSION OF THE AMENDED ABSTRACT

A method of notifying a user of the receipt of an e-mail by a mail centre is described, the method including**[comprising]** transmitting a notification message in a broadcast signal. Also described is a method of notifying a user of the receipt of e-mail by a mail centre, which e-mail is to be transmitted to the user via a first medium, the method including**[comprising]** transmitting a notification message, indicating the receipt of e-mail by the mail centre, to the user via a second medium, different from the first medium.[**Corresponding apparatus, receiver/decoder and system are also described.**]

10/019787

JC13 Rec'd PCT/PTO 04 JAN 2002

CERTIFICATE OF MAILING BY "EXPRESS MAIL" (37 CFR 1.10) Applicant(s): Mulham BAYASSI			Docket No. 11345.046001	
Serial No.	Filing Date January 4, 2002	Examiner	Group Art Unit	
Invention: METHOD AND APPARATUS FOR USE WITH E-MAIL				
<p>I hereby certify that the following correspondence:</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> Preliminary Amendment </div> <p style="text-align: center;"><i>(Identify type of correspondence)</i></p> <p>is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 in an envelope addressed to: The Assistant Commissioner for Patents, Washington, D.C. 20231 on</p> <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"> <div style="text-align: center;"> <u>January 4, 2002</u> <i>(Date)</i> </div> <div style="text-align: center;"> <u>Wendy L. Hippe</u> <i>(Typed or Printed Name of Person Mailing Correspondence)</i> <u><i>Wendy L. Hippe</i></u> <i>(Signature of Person Mailing Correspondence)</i> <u>EV049244785US</u> <i>("Express Mail" Mailing Label Number)</i> </div> </div>				
Note: Each paper must have its own certificate of mailing.				

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- 1 -

METHOD AND APPARATUS FOR USE WITH E-MAIL

The invention relates to a method of and apparatus for notifying a user of e-mail services of the receipt of e-mail at a mail centre.

5

In prior art e-mail systems, a user at a remote location accesses his e-mail by logging on to the server of his internet service provider (ISP). The ISP has a mail centre which is responsible for sending and retrieving e-mails to and from the internet, and for storing retrieved e-mails. When the user logs on to the ISP, it informs him of whether or not he has e-mail waiting for him at the mail centre; any such e-mail is then downloaded to the subscriber.

10

A problem in the prior art is that the user can only tell if he has mail by logging on to the ISP. If there is no mail waiting, then this time is wasted.

15

According to a first aspect of the present invention there is provided a method of notifying a user of the receipt of e-mail by a mail centre comprising transmitting a notification message in a broadcast signal.

20 The notification message may be sent without any (direct) user prompt.

By transmitting the notification message in a broadcast signal the user may be informed of the receipt of e-mail by the mail centre, without the need for the user to log on to the mail centre.

25

The notification message may include an identifier of the receiver/decoder to which the notification message is to be sent. This can allow the receiver/decoder to extract only those notification messages which are destined for the user or users which use that receiver/decoder. Preferably, the receiver/decoder compares the identifier with an identifier which is stored at the receiver/decoder. For example, the receiver/decoder may have a smartcard number and the identifier may comprise at least part of the smartcard number. This can provide a convenient way for the notification message to address the relevant receiver/decoder.

30

- 2 -

As used herein, the term "smartcard" includes, but not exclusively so, any chip-based card device, or object of similar function and performance, possessing, for example, microprocessor and/or memory storage. Included in this term are devices having alternative physical forms to a card, for example key-shaped devices such as are often
5 used in TV decoder systems.

Preferably the method further comprises storing information relating to e-mail accounts, for example, e-mail addresses, aliases, passwords, user preferences and so forth. The information is preferably stored at the operator, which may be at a central location. This
10 can allow the operator to manage e-mail accounts.

In order to identify the receiver/decoder to which the notification message should be sent, information relating to e-mail accounts is preferably linked to identifiers of receiver/decoders. For example, notification messages may be sent to receiver/decoders
15 having smartcard numbers and the information relating to e-mail accounts may be linked to the smartcard numbers. The smartcard number is a number unique to the smartcard of a receiver/decoder, and thus uniquely identifies the receiver/decoder.

The broadcast signal may be part of a subscription service and information relating to e-mail accounts may be linked to information relating to the subscription service. This can
20 allow e-mail accounts to be managed together with the subscription service. As used herein, the term "subscriber" refers to a subscriber to broadcast services, while the term "user" refers to a user of e-mail services. There may be one or more e-mail users associated with each subscriber.

25 The notification message may contain various pieces of information which can be made available to the user, for example for display on a television screen or on the display of a set-top box. For example, the notification message may comprise an identifier of the recipient of the e-mail (since one receiver/decoder may be used for several e-mail
30 accounts), or an identifier of the sender of the e-mail. The notification message may also comprise at least part of the text of the e-mail, for example the title or the subject of the e-mail. It should be noted that the text may be coded for transmission, and decoded by the receiver/decoder.

- 3 -

Preferably, a receiver/decoder generates a signal for displaying at least part of the notification message, such as an identifier of the recipient of the e-mail, an identifier of the sender of the e-mail, or part or all of the text of the e-mail. In other cases, no part of the notification message is displayed, but an icon appears on the screen. The receiver/decoder may be the subscriber's receiver/decoder and the signal may be for displaying at least part of the message, for example, on a television screen or on the display of the receiver/decoder.

The method may further comprise storing preferences selected by the user, for example, concerning whether or not the user wishes to be notified of e-mail, and the number of e-mails that he wishes to be notified of. The preferences may be stored in the receiver/decoder and in a database managed by the operator.

Preferably, the user is notified of a selected number of e-mails. For example, the user may be notified of each e-mail received by the mail centre, or the user may be notified only of the first e-mail received by the mail centre since the user last accessed the mail centre.

The invention has particular application in the broadcast of digital data, into which additional information may be readily inserted, and thus the broadcast signal is preferably a digital data stream, preferably transmitted via a digital transmission system. As used herein, the term "digital transmission system" includes any transmission system for transmitting or broadcasting for example primarily audiovisual or multimedia digital data. Whilst the present invention is particularly applicable to a broadcast digital television system, the invention may also be applicable to a fixed telecommunications network for multimedia internet applications, to a closed circuit television, and so on.

To reduce the amount of data that is transmitted, the digital data stream may be compressed using a digital compression technique, such as MPEG or other known compression techniques. The term MPEG refers to the data transmission standards developed by the International Standards Organisation working group "Motion Pictures Expert Group" and in particular but not exclusively the MPEG-2 standard developed for digital television applications and set out in the documents ISO 13818-1, ISO 13818-2,

- 4 -

ISO 13818-3 and ISO 13818-4. In the context of the present patent application, the term includes all variants, modifications or developments of MPEG formats applicable to the field of digital data transmission.

5 The notification message may be sent using any known technique which allows the insertion of a message into the broadcast signal; for example the notification message may be sent as a section of the digital data stream, such as an MPEG section, or by way of an entitlement management message (EMM).

10 The method may further comprise providing the user with a receiver/decoder to receive and/or to decode the broadcast signal. It should be noted that two or more users may share the same receiver/decoder. The term "receiver/decoder" used herein may connote a receiver for receiving either encoded or non-encoded signals, for example, television and/or radio signals, which may be broadcast or transmitted by some other means. The
15 term may also connote a decoder for decoding received signals. Embodiments of such receiver/decoders may include a decoder integral with the receiver for decoding the received signals, for example, in a "set-top box", such a decoder functioning in combination with a physically separate receiver, or such a decoder including additional functions, such as a web browser, a video recorder, or a television.

20 The invention is particularly suitable for use with a television broadcast system, and thus the broadcast signal may comprise a television signal. As used herein, "television broadcast system" includes for example any satellite, terrestrial, cable or other system.

25 Preferably the notification message is pushed to the user, by which it is preferably meant that the user takes no specific action to enquire about whether e-mail is waiting.

According to a second aspect of the present invention there is provided a method of notifying a user of the receipt of e-mail by a mail centre, which e-mail is to be transmitted
30 to the user via a first medium, comprising transmitting a notification message, indicating the receipt of e-mail by the mail centre, to the user via a second medium, different from the first medium.

- 5 -

Preferably the first medium is a switched medium and the second medium is a broadcast medium.

The second aspect may further comprise any of the features of the first aspect and *vice versa*.

The invention also provides a method of transferring an e-mail from a mail centre to a user, comprising transmitting at least part of the e-mail in a broadcast signal. In this way, the whole of the e-mail may be transferred to the user without the user specifically requesting the e-mail to be sent, that is, without any (direct) user prompt. The e-mail may be transferred to the user in any of the ways described above with respect to notification messages.

The invention also provides a method of communicating with a mail centre comprising running an e-mail application on a receiver/decoder. This can allow a user to communicate with a mail centre without the need for a separate computer.

In an apparatus embodiment of the present invention there is provided apparatus for notifying a user of the receipt of e-mail comprising means for transmitting a notification message in a broadcast signal.

The notification message may include an identifier of a receiver/decoder to which the notification message is to be sent.

The apparatus may further comprise means for storing information relating to e-mail accounts. Information relating to e-mail accounts may be linked to identifiers of receiver/decoders. The information relating to e-mail accounts may be linked to the smartcard numbers of decoders. The broadcast signal may be part of a subscription service and information relating to e-mail accounts may be linked to information relating to the subscription service.

The notification message may comprise an identifier of the recipient of the e-mail. The notification message may comprise an identifier of the sender of the e-mail. The notification message may comprise at least part of the text of the e-mail.

- 6 -

The apparatus may further comprise means for storing preferences selected by the user. The apparatus may be adapted to notify the user of a selected number of e-mails. The apparatus may be adapted to notify a user of each e-mail received by the mail centre. The apparatus may be adapted to notify a user only of the first e-mail received by the mail
5 centre since the user last accessed the mail centre.

The broadcast signal may be a digital data stream. The apparatus may further comprise means for compressing the digital data stream using a digital compression technique.

10 The apparatus may be adapted to send the notification message as a section of the digital data stream. The apparatus may be adapted to send the notification message by way of an entitlement management message.

The broadcast signal may comprise a television signal.

15 The apparatus may be adapted to push the notification message to the user.

According to another apparatus aspect, there is provided apparatus for notifying a user of the receipt of e-mail by a mail centre, which e-mail is to be transmitted to the user via
20 a first medium, comprising means for transmitting a notification message, indicating the receipt of e-mail by the mail centre, to the user via a second medium, different from the first medium.

The first medium may be a switched medium and the second medium may be a broadcast
25 medium.

The invention also provided apparatus for transferring an e-mail from a mail centre to a user, comprising means for transmitting at least part of the e-mail in a broadcast signal. This apparatus may comprise any of the embodiments described above with
30 respect to notification messages.

According to another apparatus aspect, there is provided a receiver/decoder for receiving and/or decoding a broadcast signal, comprising means for receiving, together with a broadcast signal, a notification message for notifying a user of the receipt of e-mail by

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- 7 -

a mail centre.

The receiver/decoder may be adapted to compare an identifier in the notification message with an identifier which is stored at the receiver/decoder. The receiver/decoder may have
5 a smartcard number and the identifier may comprise at least part of the smartcard number.

The receiver/decoder may generate a signal indicating the receipt of e-mail by the mail centre. The receiver/decoder may generate a signal for displaying at least part of the
10 notification message.

According to another apparatus aspect there is provided a receiver/decoder for receiving and/or decoding a broadcast signal, comprising means for receiving e-mail via a first medium and means for receiving a notification message, indicating the receipt of e-mail
15 by the mail centre, via a second medium different from the first medium.

The first medium may be a switched medium and the second medium may be a broadcast medium.

20 There may be provided a system for notifying a user of the receipt of e-mail comprising apparatus as described above and a receiver/decoder as described above.

Method features may be applied to the apparatus aspects and *vice versa*. Features of one aspect may be applied to other aspects.

25

Preferred features of the present invention will now be described, purely by way of example, with reference to the accompanying drawings, in which:-

Figure 1 shows the architecture of a typical digital television system;

30 Figure 2 is a schematic diagram of a receiver/decoder;

Figure 3 shows an overview of an internet access system;

Figure 4 illustrates software layers in the user equipment of Figure 3;

Figure 5 shows the architecture of an internet access system;

Figure 6 shows the main components of an internet account management

- 8 -

system; and

Figure 7 shows the structure of an entitlement management message.

An overview of a digital television system 1 is shown in Figure 1. The invention
5 includes a mostly conventional digital television system 2 that uses the known MPEG-2
compression system to transmit compressed digital signals. In more detail, MPEG-2
compressor 3 in a broadcast centre receives a digital signal stream (typically a stream
of video signals). The compressor 3 is connected to a multiplexer and scrambler 4 by
linkage 5.

10

The multiplexer 4 receives a plurality of further input signals, assembles the transport
stream and transmits compressed digital signals to a transmitter 6 of the broadcast
centre via linkage 7, which can of course take a wide variety of forms including
telecommunications links. The transmitter 6 transmits electromagnetic signals via
15 uplink 8 towards a satellite transponder 9, where they are electronically processed and
broadcast via notional downlink 10 to earth receiver 12, conventionally in the form of
a dish owned or rented by the end user. Other transport channels for transmission of
the data are of course possible, such as terrestrial broadcast, cable transmission,
combined satellite/cable links, telephone networks etc.

20

The signals received by receiver 12 are transmitted to an integrated receiver/decoder
13 owned or rented by the end user and connected to the end user's television set 14.
The receiver/decoder 13 decodes the compressed MPEG-2 signal into a television
signal for the television set 14. Although a separate receiver/decoder is shown in
25 Figure 1, the receiver/decoder may also be part of an integrated digital television. As
used herein, the term "receiver/decoder" includes a separate receiver/decoder, such as
a set-top box, and a television having a receiver/decoder integrated therewith.

In a multichannel system, the multiplexer 4 handles audio and video information
30 received from a number of parallel sources and interacts with the transmitter 6 to
broadcast the information along a corresponding number of channels. In addition to
audiovisual information, messages or applications or any other sort of digital data may
be introduced in some or all of these channels interlaced with the transmitted digital

- 9 -

audio and video information.

A conditional access system 15 is connected to the multiplexer 4 and the receiver/decoder 13, and is located partly in the broadcast centre and partly in the receiver/decoder. It enables the end user to access digital television broadcasts from one or more broadcast suppliers. A smartcard, capable of deciphering messages relating to commercial offers (that is, one or several television programmes sold by the broadcast supplier), can be inserted into the receiver/decoder 13. Using the receiver/decoder 13 and smartcard, the end user may purchase commercial offers in either a subscription mode or a pay-per-view mode.

As mentioned above, programmes transmitted by the system are scrambled at the multiplexer 4, the conditions and encryption keys applied to a given transmission being determined by the access control system 15. Transmission of scrambled data in this way is well known in the field of pay TV systems. Typically, scrambled data is transmitted together with a control word for descrambling of the data, the control word itself being encrypted by a so-called exploitation key and transmitted in encrypted form.

The scrambled data and encrypted control word are then received by the receiver/decoder 13 having access to an equivalent to the exploitation key stored on a smart card inserted in the receiver/decoder to decrypt the encrypted control word and thereafter descramble the transmitted data. A paid-up subscriber will receive, for example, in a broadcast monthly EMM (Entitlement Management Message) the exploitation key necessary to decrypt the encrypted control word so as to permit viewing of the transmission.

An interactive system 16, also connected to the multiplexer 4 and the receiver/decoder 13 and again located partly in the broadcast centre and partly in the receiver/decoder, enables the end user to interact with various applications via a modemed back channel 17. The modemed back channel may also be used for communications used in the conditional access system 15.

Physical interfaces of the receiver/decoder 13 are used for downloading data. With

- 10 -

reference to Figure 2, the receiver/decoder 13 contains, for example, six downloading devices; serial interface 30, parallel interface 32, modem 34, two card readers 36, and MPEG flow tuner 38.

5 The broadcast and reception system is also used to provide internet services such as web browsing and e-mail. An application which is run by the receiver/decoder 13 enables the receiver/decoder to access internet services and to display web pages and e-mails either on television set 14 or via a computer connected to the receiver/decoder 13.

10 Referring to Figure 3, an overview of the internet access system will be described. User equipment 20 (which includes a receiver/decoder) communicates with operator 22 via the public switched telephone network (PSTN) 24. The user equipment sends a request to the operator 22 to be sent certain data, for example, a particular web page or e-mail. The operator receives this request and outputs the request to internet service
15 provider (ISP) 26. In response to this request, the ISP supplies a response to the operator, which might comprise a requested web page obtained from the internet 27, or an e-mail which was waiting for the subscriber at the ISP. The operator delivers the response to the broadcast centre 28, where it is integrated into the MPEG bitstream, for example as a private section, and transmitted by the transmitter 6 and received by
20 receiver 12 as previously described. The user equipment 20 extracts the response from the MPEG bitstream and displays it on a television set or on a computer screen. The response may alternatively be transmitted to user equipment 20 via the PSTN 24.

The software levels employed in the user equipment 20 are shown in Figure 4. The
25 application level comprises a web browser and e-mail application, which may be a commercial application such as Netscape or Microsoft Internet Explorer and Outlook Express, or an application specifically designed to run on a receiver/decoder. Below the application level are HTTP, socket, TCP/IP, PPP/SLIP and a driver level. The driver level is modified, as compared with a browser application running traditionally
30 on a PC, in that it is divided into a modem driver for communicating with the PSTN 24 via the modem of the user equipment and a tuner driver for communicating via the MPEG flow tuner 4028.

- 11 -

Various configurations of the user equipment 20 are possible. In one configuration a PC is not used and all of the user software runs on the receiver/decoder 13. In this configuration the receiver/decoder 13 communicates with the PSTN 24 either via an internal modem or via an external modem and the serial port. The receiver/decoder 13
5 can receive Internet responses in the bitstream from the earth receiver 12. The user interface is provided by a remote controller or keyboard and a television set connected to the receiver/decoder 13. In this configuration, the TCP/IP level shown in Figure 4 may be omitted, in which case a gateway located at the operator provides the necessary protocols, as will be described later.

10

In another configuration a personal computer (PC) is provided which is connected by its parallel port to the parallel port 32 of the receiver/decoder 13 (or optionally by its serial port to the serial port 30 of the receiver/decoder 13). In this case, an upper portion of the software levels shown in Figure 4 run on the PC, and the remaining
15 lower portion of the software levels run on the receiver/decoder 13. The user interface is provided by a keyboard and a monitor connected to the PC.

In a further configuration a PC is connected to the PSTN 24 via an internal or external modem of the PC. In this configuration, the receiver/decoder 13 may be provided
20 separately or in the form of an add-on or plug-in card of the PC, connected to the ISA or PCI bus thereof.

The architecture of the internet access system is shown in Figure 5. Referring to Figure 5, internet account management system (IAMS) 50 is linked to internet service provider
25 (ISP) 26 which provides services such as web browsing and e-mail. The IAMS 50 is also linked to subscriber management system (SMS) 60 which manages subscribers and sends requests to the IAMS to grant or deny access to internet services. Receiver/decoder 13 is connected to the IAMS via an internal modem, the public switched telephone network (PSTN) 24, network access server (NAS) 56, and gateway 58.

30

The SMS is also connected to Subscription Authorisation System (SAS) 61, which manages authorisations and subscribers' orders for broadcast services, such as broadcast television services. The SMS runs the SAS and IAMS systems in parallel and ensures

- 12 -

consistency between the two systems. Communication between the SMS and the SAS and IAMS takes place using a real time TCP/IP link using batch files.

Gateway 58 allows users to access internet services in real time. Such services include
5 mail services for sending and receiving mail and other services which may be provided
by ISP 26, and provisioning services and reminder services, which are provided by the
IAMS. The gateway 58 is a message router that enables communication with various
different systems in a single modem connection. Where the receiver/decoder is not
equipped with TCP/IP protocols for communicating with the ISP, the gateway also
10 provides the necessary protocols for the receiver/decoder to communicate with the ISP.
The receiver/decoder 13 then communicates with the ISP via gateway 58, as indicated by
line 59 in Figure 5. Where the receiver/decoder is equipped with the necessary protocols,
communication can take place with the ISP directly, as indicated by dashed line 57 in
Figure 5.

15 ISP interface 66 allows each modification related to a user's account which takes place
in the IAMS to be duplicated to a user account in ISP 26 in charge of hosting internet
services, such as mail services. It should be noted that all information relating to users'
internet accounts is centralised in the IAMS, which ensures the management of TV and
20 internet parameters. The IAMS also ensures the relationship between internet parameters
and TV parameters, through its interface with Subscriber Management System (SMS) 60
The SMS 60 manages subscribers and sends requests to the IAMS in order to grant or to
deny access to internet services by subscribers.

25 In order to set up a user account, a user first sends a request for a new account, which
includes the smartcard number together with information such as requested e-mail
address and password and selected options, from the receiver/decoder 13 to the IAMS 50.
The IAMS checks if the related subscriber's account has already been created on a request
from the SMS, by checking the smartcard number of the receiver/decoder. If the
30 subscriber account has been created, then the subscriber may create new user accounts.
The IAMS then sends a request to the ISP to set up an internet account together with the
requested e-mail address and password. Once the account has been set up, the ISP
returns an acknowledgement to the IAMS. The user account information (password, e-
mail address and internet parameters), is stored in the IAMS, along with the smartcard

- 13 -

number of the subscriber. The user can then send and receive mail to and from the mail server 28.

The main components of the IAMS are shown in Figure 6. The main functions of the

5 IAMS are as follows:

- maintaining a centralised list of e-mail account parameters linked to subscriber parameters such as smartcard number
- granting or denying access to internet services for a subscriber at the request of the SMS
- 10 ○ customising internet accounts at the request of subscribers (provisioning)
- reminder service, which allows an e-mail user to register an event and to be warned by an e-mail at the time of the event
- duplication service, which allows updates of the IAMS contents to be copied to a related server, such as an ISP

15

Central to the IAMS is a relational database management system (RDBMS) 70, which contains subscription information for internet services and e-mail accounts, stored in storage means 72. SMS communication interface 74 allows the IAMS to communicate with the SMS, so that the IAMS may be updated with the details of subscribers who have
20 been granted or denied access to mail services. Provisioning server 76 allows a user to manage and customise his e-mail account. Reminder server 78 allows a user to manage a list of events. An event is related to a user's e-mail account. A user may register an event and receive an automatic reminder a predetermined number of days before the event via an automatically generated e-mail. E-mail notification interface 84 allows the
25 EMNS 62 to search for a user's notification preferences in the IAMS RDBMS 70 in order to send an over air notification message. Support server 80 allows an administrator to check the presence and the status of a subscriber or an e-mail user in the IAMS. Replication service 82 copies updates of the contents of the IAMS RDBMS 70 to the ISP account management system.

30

Requests which are sent to the IAMS from receiver/decoder 13 are directed to the appropriate part of the IAMS, such as the provisioning server (for e-mail account management) and the reminder server (to manage reminder events), by the gateway 58.

- 14 -

Further details of the IAMS are described in co-pending patent application entitled "Internet Subscriber Management" in the name of the present applicant, the subject matter of which is incorporated herein by reference. Further details of the gateway, and the method of communication between the receiver/decoder and the IAMS and the
5 ISP, are described in co-pending application entitled "Communication Methods and Apparatus" in the name of the present applicant, the subject matter of which is incorporated herein by reference.

E-mail notification

10 As shown in Figures 5 and 6, the IAMS is provided with an e-mail notification interface 84, which interfaces with e-mail notification system (block 62 in Figure 5). The e-mail notification system allows users to be notified as soon as they receive new e-mail in their mailboxes in mail server 64. A short message is sent to their receiver/decoder over-air.

15 Mail server 64 stores e-mails which have been received from the internet and which are destined for the user. When new mail is received the mail server sends a notification demand to e-mail notification system (EMNS) 62. The notification demand is only sent on receipt of new mail by the ISP 26, that is, it is event driven. The various messages
20 that may be sent from the ISP to the EMNS are as follows:

- new e-mail - new e-mail is waiting
- first e-mail - first e-mail since user last connected
- user connected to mail server

25 Once the EMNS has received a notification request from the ISP, it searches in the IAMS RDBMS 70 for the user's notification preferences and related parameters needed to compose a notification message. Various preferences which may be selected by the user include the following:

- e-mail notification on or off
- 30 ○ notify each new mail or first mail since last connection to the ISP
- display the sender of the e-mail
- display the recipient of the e-mail

- 15 -

In some cases, it may be the operator who sets some or all of the above preferences.

The EMNS also checks that the user has not been denied use of the notification system, for example by the SMS. If the above checks reveal that the user should be informed
5 of his e-mail, then a notification message is then generated for relay to the user. The notification message contains the smartcard number of the receiver/decoder of the user concerned, which is extracted from the IAMS RDBMS 70. The smartcard number uniquely identifies the receiver/decoder (although it is not necessarily unique to a user, since a receiver/decoder may serve a plurality of users). The notification message may
10 also contain other information such as information identifying the recipient of the e-mail, information identifying the sender of the e-mail, and text for display by the receiver/decoder, such as the title or subject of the e-mail.

A request to broadcast the notification message is sent from the EMNS to broadcast
15 centre 63. On receipt of the request, the broadcast centre transmits the notification message at regular intervals for a predetermined amount of time, for example, every 15 minutes for 24 hours. The cycle time may be varied; for example the notification message may be sent relatively frequently for a first period of time and relatively infrequently for a second period of time. The notification message may be sent, for
20 example, as an entitlement management message (EMM) or as an MPEG-2 section.

Referring to Figure 7, the structure of an EMM suitable for sending an e-mail notification message is now described. The EMM, which is implemented as a series of digital data bits, comprises a header 3060, the EMM proper 3062, and a signature
25 3064.

The header 3060 comprises a type identifier 3066, which in this case identifies the EMM as an individual type (that is, destined for a single subscriber), a length identifier 3068, which gives the length of the EMM, an address 3070, which is based on the
30 smartcard number of the subscriber, an operator identifier 3072 and a key identifier 3074.

The EMM proper 3062 comprises information identifying the EMM as a mail

- 16 -

notification EMM together with other information relating to the mail notification. For example, the EMM may contain information concerning the recipient of the e-mail in the household (where there are several e-mail users each using the same receiver/decoder), the sender of the e-mail, the title or subject of the e-mail, the number of waiting e-mails, and so on. Also in this part of the EMM is an index which identifies that particular EMM.

Finally, the signature 3064, which is typically of 8 bytes long, provides a number of checks against corruption of the remaining data in the EMM.

10

As mentioned above, instead of using an EMM to transmit the notification message, an MPEG section could also be used, in which any or all of the above information could be included. The advantage of using an MPEG section is that TV access control is not disturbed.

15

Each receiver/decoder monitors incoming notification messages and extracts those containing the smartcard number of that receiver/decoder. If more than one user is connected to the receiver/decoder, it identifies the particular user to whom the e-mail is addressed, based on information in the notification message. The receiver/decoder then informs the user that e-mail is waiting for him, for example by displaying a message on the receiver/decoder display, or on the television screen. Other information contained in the notification message may also be displayed.

20

Finally, when the receiver/decoder has received a mail notification message, it "burns" the message, so that the message is not repeatedly displayed. This is done by comparing incoming mail notification messages to ones that have already been received, and only notifying new messages. Typically, the EMM or MPEG section contains an index identifying that EMM or MPEG section, in which case only the indexes need be compared in order to identify whether that message has already been received and acted upon. Additionally or alternatively, the receiver/decoder 13 could request the EMNS 62 to stop sending the notification message, for example by sending a request via the PSTN 24.

25

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- 17 -

Once the user has been notified of waiting mail, he can send a request to the ISP to send the e-mail. The e-mail may be sent either via the PSTN 24, or via communications link 8,9,10, in the way described above with reference to Figure 3. In an alternative embodiment, on receipt of an e-mail notification message, the receiver/decoder 13 automatically downloads the e-mail and stores it locally for access later by the subscriber.

When the user retrieves his e-mail, the EMNS receives a message from the ISP that the e-mail has been retrieved. On receipt of this message, the EMNS stops sending the notification.

In a further embodiment, the whole of the e-mail is pushed to the user in the same way as described above with reference to notification messages. This embodiment may be preferred in communication systems with large bandwidths, such as cable and optical fibre transmission systems. In this embodiment, the need for a separate notification message may be dispensed with, since the e-mail itself is broadcast.

It will be appreciated that the e-mail notification system described above notifies a user of the arrival of e-mail at a mail centre without the user having to enquire whether e-mail is waiting, that is, the mail notification message is "pushed" to the user.

Terms

The following terms are used herein:

- | | | |
|----|-----------------|---|
| 25 | E-mail Address | An E-mail address is composed of two fields: the E-mail ID and the domain name. The form of an e-mail Address is e-mail_Id@Domain_Name. |
| | E-mail Account | An E-mail Account provides information about the user that a Mail Server needs to process that user's messages. |
| 30 | E-mail Id | The prefix of an e-mail address. An e-mail Id is unique in a domain name. |
| | E-mail Notifier | The e-mail Notifier System allows subscribers (EMN) to be notified as soon as they receive a new e-mail in their mailboxes. |

- 18 -

A short message is sent to their STB over-air, and/or by other means.

Internet Account

- 5 Management System A system managing subscriber TV account Management parameters and related E-mail Accounts System (IAMS) parameters
- Mailbox Messages stored for IMAP delivery are held in a mailbox (IMAP or POP). A mailbox on a mail server must be uniquely identified by a mailbox Id. A mail server hosting different domain name can not consider that the e-mail Id is unique on the Mail server, so the mailbox Id must be the Email address.
- 10 Mail Server Program that exchanges e-mail with other Mail Servers and accepts and delivers messages to mail clients.
- 15 Provisioning Server Allows users to create and customise e-mail accounts themselves.
- Reminder Server Allows a user to register an event and receive an automatic reminder via an automatic mail.
- 20 Set Top Box The completely assembled, ready to use (STB) digital decoding hardware, manufactured in accordance with Digital Video Broadcasting standards, CANAL + TECHNOLOGIES specifications. It is used as a digital decoder for transmitted video, audio, application and data streams so that the end user can access television programs and services.
- 25 SmartCard Cards that electronically store the secret keys of one or more commercial operators and other access information.
- Subscriber A subscriber is related to a TV account (i.e. a SmartCard number).
- 30 Subscriber Management System (SMS) A system managing data relating to subscribers.
- User A user is related to an e-mail account. There may be multiple users for a single subscriber.

- 19 -

It will be understood that the present invention has been described above purely by way of example, and modifications of detail can be made within the scope of the invention.

- 5 Each feature disclosed in the description, and (where appropriate) the claims and drawings may be provided independently or in any appropriate combination.

Reference numerals appearing in the claims are by way of illustration only and shall have no limiting effect on the scope of the claims.

10

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- 20 -

CLAIMS

1. A method of notifying a user of the receipt of an e-mail by a mail centre, comprising transmitting a notification message in a broadcast signal.
- 5 2. A method according to claim 1 wherein the notification message is sent without any (direct) user prompt.
3. A method according to claim 1 or 2 wherein the notification message
10 includes an identifier of a receiver/decoder to which the notification message is to be sent.
4. A method according to claim 3 wherein the receiver/decoder compares the identifier with an identifier which is stored at the receiver/decoder.
- 15 5. A method according to claim 3 or 4 wherein the receiver/decoder has a smartcard number and the identifier comprises at least part of the smartcard number.
6. A method according to any of the preceding claims further comprising
20 storing information relating to e-mail accounts, preferably at a central location.
7. A method according to claim 6 wherein information relating to e-mail accounts is linked to identifiers of receiver/decoders, and preferably wherein the information relating to e-mail accounts is linked to the smartcard numbers of
25 receiver/decoders.
8. A method according to claim 6 or 7 wherein the broadcast signal is part of a subscription service and information relating to e-mail accounts is linked to information relating to the subscription service.
- 30 9. A method according to any of the preceding claims wherein the notification message comprises an identifier of the recipient of the e-mail.

- 21 -

10. A method according to any of the preceding claims wherein the notification message comprises an identifier of the sender of the e-mail.

11. A method according to any of the preceding claims wherein the
5 notification message comprises at least part of the text of the e-mail.

12. A method according to any of the preceding claims wherein the notification message is sent to a receiver/decoder.

10 13. A method according to claim 12 wherein the receiver/decoder generates a signal for indicating to the user receipt of the e-mail by the mail centre.

14. A method according to any of the preceding claims further comprising storing preferences selected by the user.

15 15. A method according to any of the preceding claims further comprising notifying the user of a selected number of e-mails.

16. A method according to any of the preceding claims wherein the
20 broadcast signal is a digital data stream.

17. A method according to claim 16 wherein the notification message is sent as a section of the digital data stream.

25 18. A method according to claim 16 wherein the notification message is sent by way of an entitlement management message.

19. A method of notifying a user of the receipt of e-mail by a mail centre, which e-mail is to be transmitted to the user via a first medium, comprising transmitting
30 a notification message, indicating the receipt of e-mail by the mail centre, to the user via a second medium, different from the first medium.

20. A method according to claim 19 wherein the first medium is a switched

- 22 -

medium and the second medium is a broadcast medium.

21. A method according to any of the preceding claims further comprising transmitting at least part of the e-mail in the broadcast signal.

5

22. A method of transferring an e-mail from a mail centre to a user, comprising transmitting at least part of the e-mail in a broadcast signal.

23. A method of communicating with a mail centre, comprising running an e-mail application on a receiver/decoder.

10

24. Apparatus for notifying a user of the receipt of e-mail by a mail centre, comprising means for transmitting a notification message in a broadcast signal.

25. Apparatus according to claim 24 wherein the notification message includes an identifier of a receiver/decoder to which the notification message is to be sent.

15

26. Apparatus according to claims 24 or 25 further comprising means for storing information relating to e-mail accounts.

20

27. Apparatus according to claim 26 wherein information relating to e-mail accounts is linked to identifiers of receiver/decoders, and preferably wherein the information relating to e-mail accounts is linked to the smartcard numbers of receiver/decoders.

25

28. Apparatus according to claim 26 or 27 wherein the broadcast signal is part of a subscription service and information relating to e-mail accounts is linked to information relating to the subscription service.

30

29. Apparatus according to any of claims 24 to 28 wherein the notification message comprises an identifier of the recipient of the e-mail.

- 23 -

30. Apparatus according to any of claims 24 to 29 wherein the notification message comprises an identifier of the sender of the e-mail.

31. Apparatus according to any of claims 24 to 30 wherein the notification
5 message comprises at least part of the text of the e-mail.

32. Apparatus according to any of claims 24 to 31 further comprising means for storing preferences selected by the user.

10 33. Apparatus according to any of claims 24 to 32 wherein the apparatus is adapted to notify the user of a selected number of e-mails.

34. Apparatus according to any of claims 24 to 33 wherein the broadcast
signal is a digital data stream.

15 35. Apparatus according to claim 34 wherein the apparatus is adapted to send the notification message as a section of the digital data stream.

36. Apparatus according to claim 34 wherein the apparatus is adapted to
20 send the notification message by way of an entitlement management message.

37. Apparatus according to any of claim 24 to 36 wherein the apparatus is adapted to send at least part of the e-mail in the broadcast signal.

25 38. Apparatus for transferring an e-mail from a mail centre to a user, comprising means for transmitting at least part of the e-mail in a broadcast signal.

39. Apparatus for notifying a user of the receipt of e-mail by a mail centre, which e-mail is to be transmitted to the user via a first medium, comprising means for
30 transmitting a notification message, indicating the receipt of e-mail by the mail centre, to the user via a second medium, different from the first medium.

40. Apparatus according to claim 39 wherein the first medium is a switched

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- 24 -

medium and the second medium is a broadcast medium.

41. A receiver/decoder for receiving and/or decoding a broadcast signal, comprising means for receiving, together with a broadcast signal, a notification
5 message for notifying a user of the receipt of e-mail by a mail centre.

42. A receiver/decoder according to claim 41 wherein the receiver/decoder is adapted to compare an identifier in the notification message with an identifier which is stored at the receiver/decoder.

10 43. A receiver/decoder according to claim 41 or 42 wherein the receiver/decoder has a smartcard number and the identifier comprises at least part of the smartcard number.

15 44. A receiver/decoder according to any of claims 41 to 43 wherein the receiver/decoder generates a signal indicating the receipt of e-mail by the mail centre.

20 45. A receiver/decoder according to any of claims 41 to 44 wherein the receiver/decoder generates a signal for displaying at least part of the notification message.

25 46. A receiver/decoder for receiving and/or decoding a broadcast signal, comprising means for receiving e-mail via a first medium and means for receiving a notification message, indicating the receipt of e-mail by the mail centre, via a second medium different from the first medium.

47. A receiver/decoder according to claim 46 wherein the first medium is a switched medium and the second medium is a broadcast medium.

30 48. System for notifying a user of the receipt of e-mail comprising apparatus according to any of claims 24 to 40 and a receiver/decoder according to any of claims 41 to 47.

- 25 -

49. A method substantially as described herein with reference to Figures 1-7 of the accompanying drawings.

50. Apparatus substantially as described herein with reference to and as
5 illustrated in the accompanying drawings.

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FIG. 1

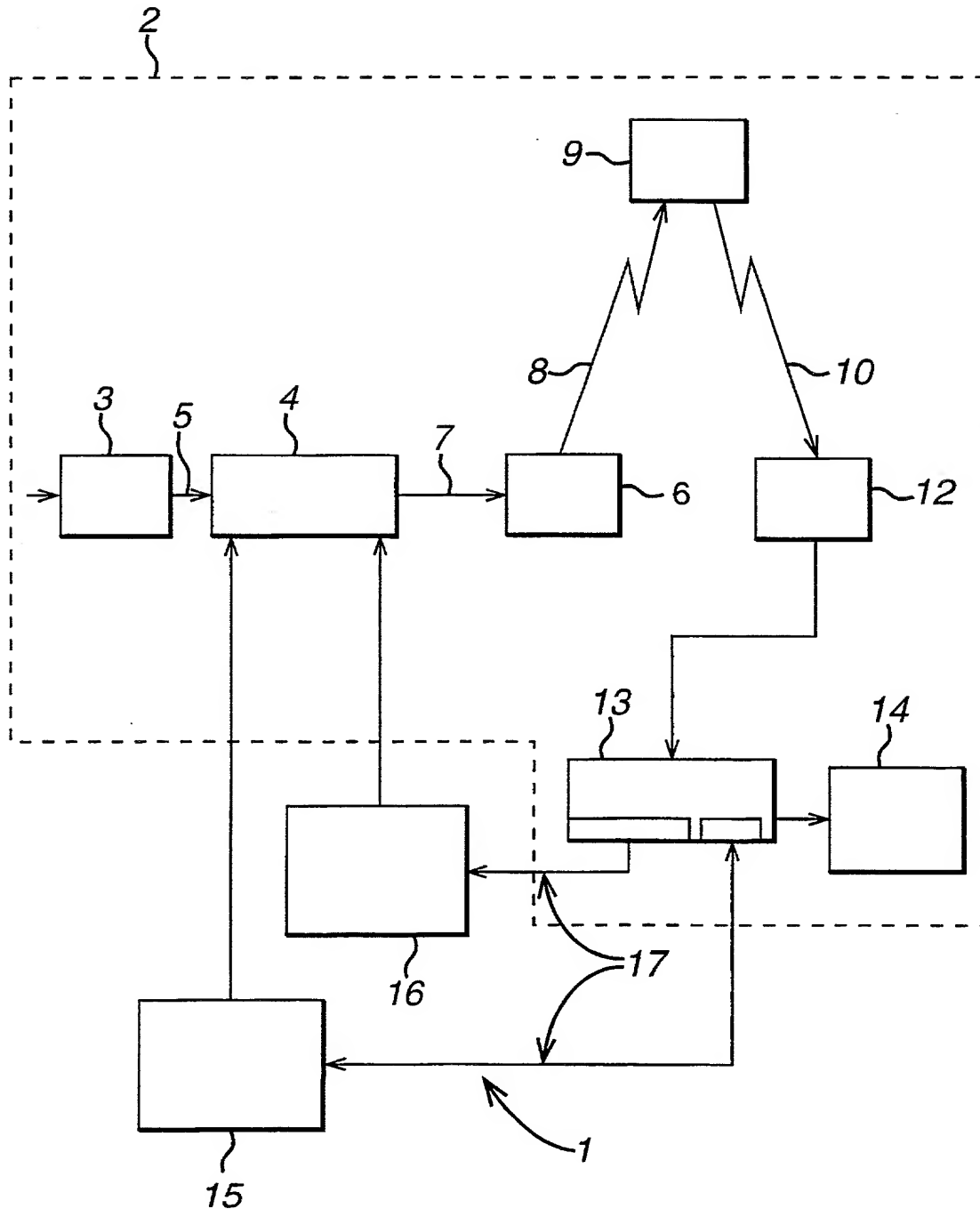


FIG. 2

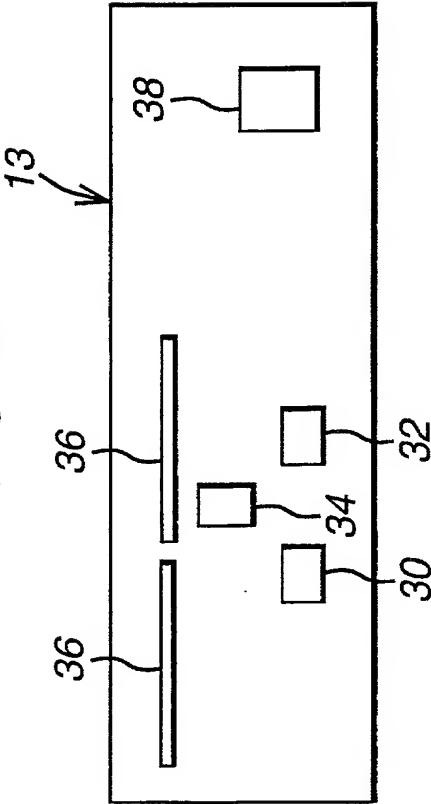


FIG. 7

3066	3068	3070	3072	3074		
TYPE IDENTIFIER	LENGTH IDENTIFIER	ADDRESS	OPERATOR IDENTIFIER			
HEADER 3060					EMM PROPER 3062	SIGNATURE 3064

3/5

FIG. 3

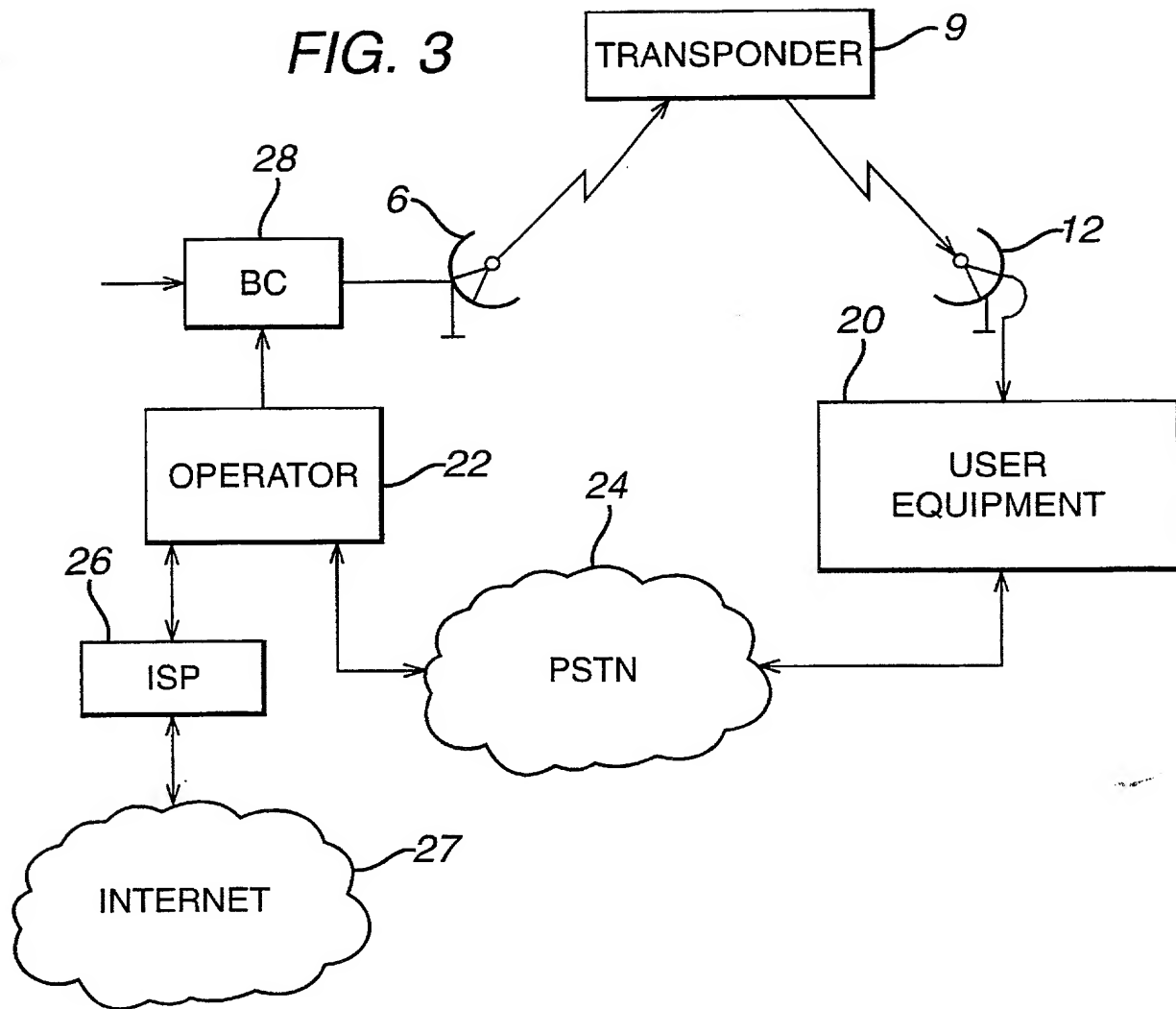
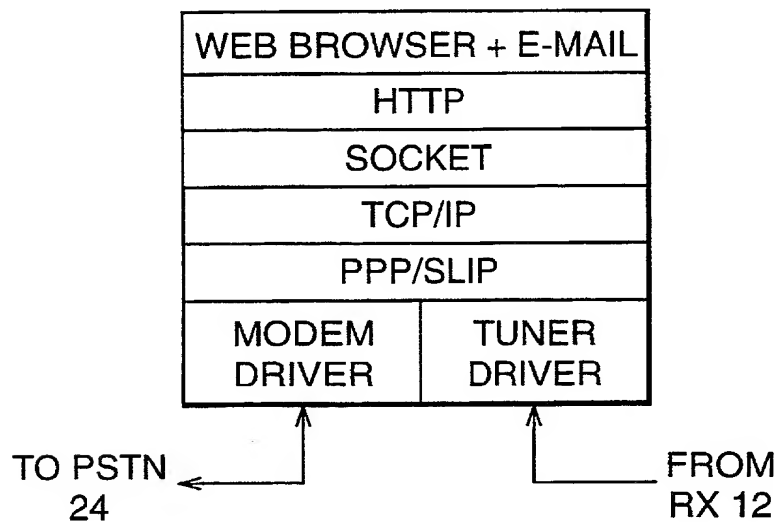


FIG. 4



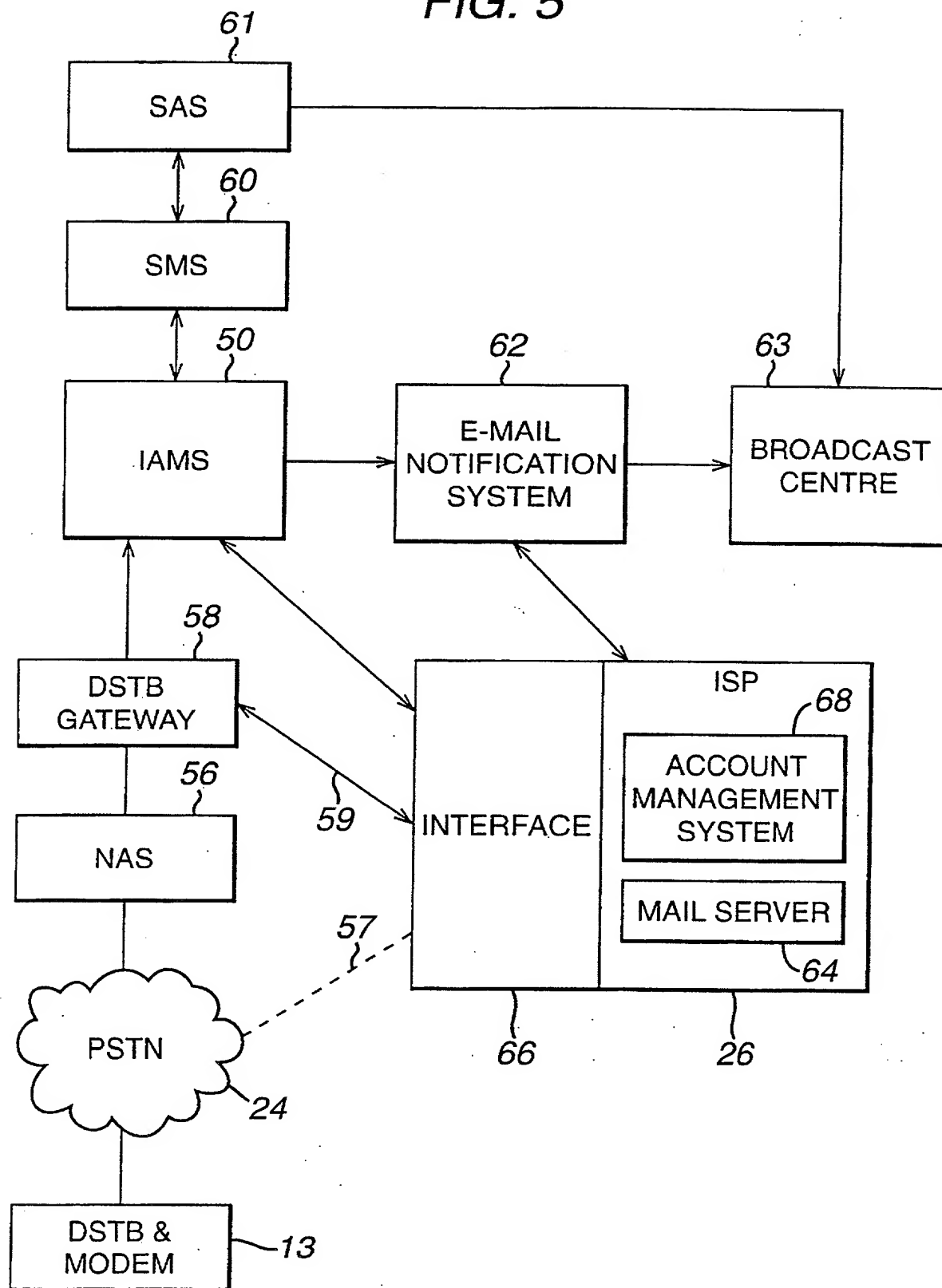
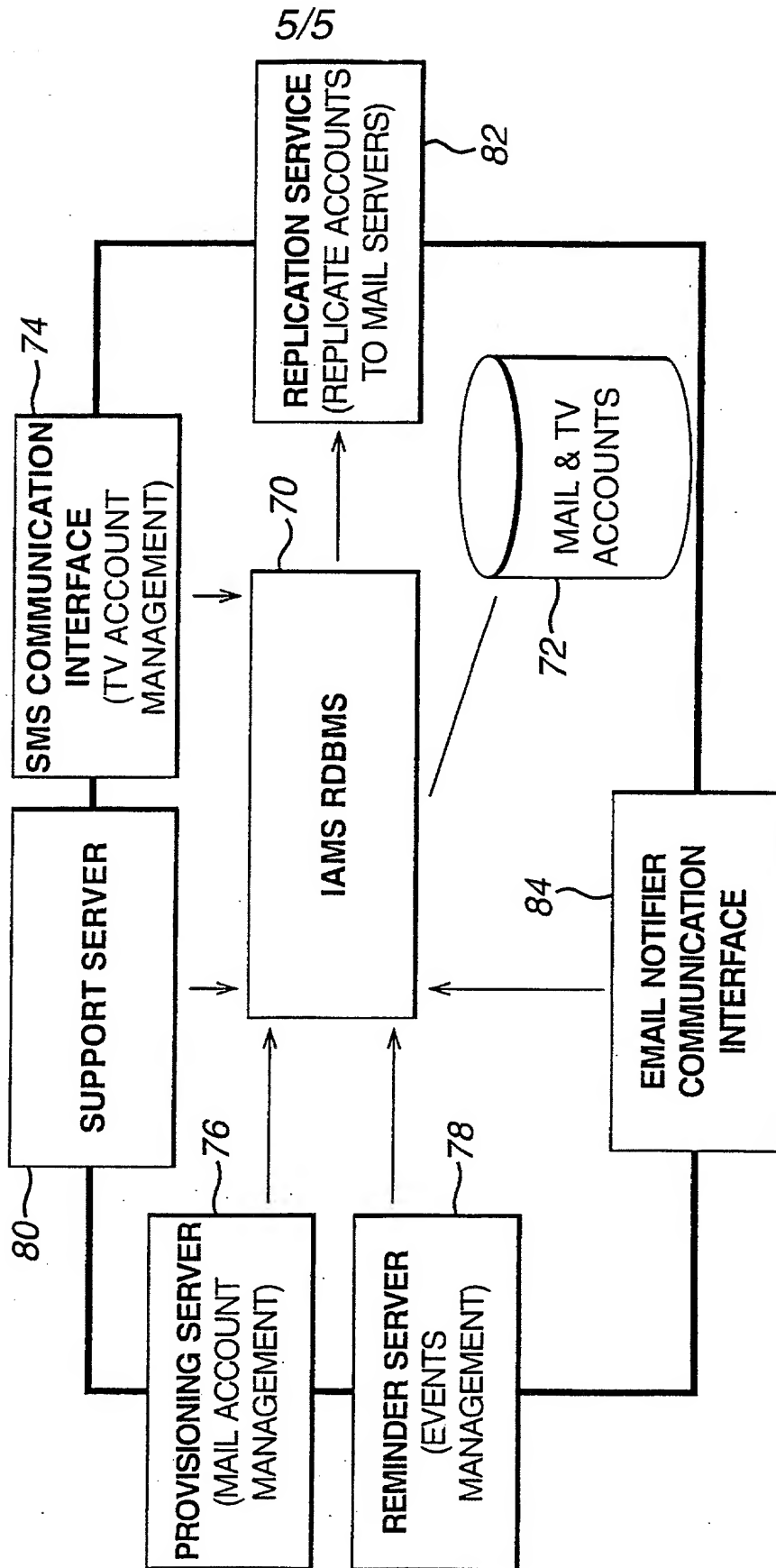
4/5
FIG. 5

FIG. 6



PTO/SB/105 (2-98)

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Prior foreign application(s)

Demande(s) de brevet antérieure(s)

99401680.6 Europe
(Number)/(Numéro) (Country)/(Pays)

99401888.5 Europe
(Number)/(Numéro) (Country)/(Pays)

I hereby claim foreign priority under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States, listed below, and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed.

Priority not Claimed

Droit de priorité revendiqué

5 July 1999 ☐
(Day/Month/Year Filed)/(Jour/Mois/Année de dépôt) (Pays)

23 July 1999 ☐
(Day/Month/Year Filed)/(Jour/Mois/Année de dépôt)

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, §119(e) du Code des Etats-Unis, de toute demande de brevet provisoire effectuée aux Etats Unis et figurant ci-dessous.

(Application Number)/(N° de demande)

(Application Number)/(N° de demande)

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, §120 du Code des Etats-Unis, de toute demande de brevet effectuée aux Etats-Unis, ou en vertu du Titre 35, §365(c) du même Code, de toute demande internationale PCT désignant les Etats-Unis et figurant ci-dessous et, dans la mesure où l'objet de chacune des revendications de cette demande de brevet n'est pas divulgué dans la demande antérieure américaine ou internationale PCT, en vertu des dispositions du premier paragraphe du Titre 35, §112 du Code des Etats Unis, je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, §1.56 du Code Fédéral des Réglementations, dont j'ai pu disposer entre la date de dépôt de la demande antérieure et la date de dépôt de la demande nationale ou internationale PCT de la présente demande.

(Status, patented, pending, abandoned)
(Statut, breveté, en cours d'examen, abandonné)

(Status, patented, pending, abandoned)
(Statut, breveté, en cours d'examen, abandonné)

Je déclare par le présent acte que toute déclaration ci-incluse est, à ma connaissance, véridique et que toute déclaration formulée à partir de renseignements ou de suppositions est tenue pour véridique, et de plus, que toutes ces déclarations ont été formulées en sachant que toute fausse déclaration volontaire ou son équivalent est passible d'une amende ou d'une incarcération, ou des deux, en vertu de la Section 1001 du Titre 18 du Code des Etats-Unis, et que de telles déclarations volontairement fausses risquent de compromettre la validité de la demande de brevet ou du brevet délivré à partir de celle-ci.

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

(Filing Date)/(Date de dépôt)

(Filing Date)/(Date de dépôt)

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or under § 365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of Title 35 United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

(Status) (patented, pending, abandoned)
(Statut) (breveté, en cours d'examen, abandonné)

(Status) (patented, pending, abandoned)
(Statut) (breveté, en cours d'examen, abandonné)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any issued thereon.

PTO/SB/105 (2-98)

Approved for use through 9/30/98. OMB 0651-0032

Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Declaration and Power of Attorney for Patent Application**Déclaration et Pouvoirs pour Demande de Brevet****22511**

PATENT TRADEMARK OFFICE

En tant que l'inventeur nommé ci-après,

As a below named inventor, I hereby declare that:

Mon domicile, mon adresse postale et ma nationalité sont ceux figurant ci-dessous à côté de mon nom.

My residence, post office address and citizenship are as stated below next to my name.

Je crois être le premier inventeur original et unique (si un seul nom est mentionné ci-dessous), ou l'un des premiers co-inventeurs originaux (si plusieurs noms sont mentionnés ci-dessous) de l'objet revendiqué, pour lequel une demande de brevet a été déposée concernant l'invention intitulée.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Method and apparatus for use with e-mail

Et dont la description est fournie ci-joint à moins que la case n'ait été cochée:

the specification of which is attached hereto unless the following box is checked:

☒ a été déposée le 29/02/2000 ;
sous le numéro de demande des Etats-Unis ou le numéro de
demande internationale PCT N° PCT/IB00/00241
et modifiée le _____
(le cas échéant) _____

☐ was filed on February 2, 2000 ;
as United States Application Number or PCT International
Application PCT No. PCT/IB00/00241
and was amended on _____
(if applicable).

Je déclare par le présent acte avoir passé en revue et compris le contenu de la description ci-dessus, revendications comprises, telles que modifiées par toute modification dont il aura été fait référence ci-dessus.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

Je reconnais devoir divulguer toute information pertinent à la brevetabilité, comme défini dans le Titre 37, §1.56 du Code fédéral des réglementations.

I acknowledge the duty to disclose information that is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

PTO/SR/105 (2-98)

Approved for use through 9/30/98. OMB 0651-0032

Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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French Language Declaration

POUVOIRS: En tant que l'inventeur cité, je désigne par la présente l'(les) avocat(s) et/ou agent(s) suivant(s) pour qu'il(s) poursuive(nt) la procédure de cette demande de brevet et traite(nt) toute affaire s'y rapportant avec l'Office des brevets et des marques: (mentionner le nom et le numéro d'enregistrement).

Adresser toute correspondance à:

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: (list name and registration number).

PTO Customer No. 22511

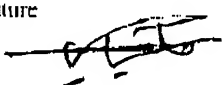
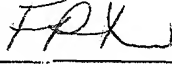
Send Correspondence to:

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Adresser tout appel téléphonique à: (nom et numéro de téléphone)

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Jonathan P. Osha
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Nom complet de l'unique ou premier inventeur		Full name of sole or first inventor	
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Nom complet du second co-inventeur, le cas échéant		Full name of second joint inventor, if any	
Signature du second inventeur	Date	Second Inventor's signature	Date
Domicile		Residence	
Nationalité		Citizenship	
Adresse Postale		Post Office Address	

(fournir les mêmes renseignements et la signature tout co-inventeur supplémentaire)

(Supply similar information and signature for third and subsequent de joint inventors)